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# USSR Report

ECONOMIC AFFAIRS



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## ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

### ECONOMISTS DISCUSS DETERMINATION OF ECONOMIC PRIORITIES

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 10, Oct 84 pp 46-52

[Article by Candidate of Economic Sciences V. Novichkov and Candidate of Economic Sciences G. Abdykulova, senior scientific associate of the Scientific Research Institute of Economics attached to the USSR State Planning Committee: "Some Questions of the Determination of the Priorities of the National Economy"]

[Text] The law of planned proportionate development is objectively characteristic of the economy of socialist society, which is based on the public ownership of the means of production and a directly social nature of labor. The planned management of the economy, the task of which consists in the assurance of the balanced, efficient and dynamic development of the national economy, is one of the forms of the realization of this law.

The process of drafting the plan begins with the determination of the basic socioeconomic goals and tasks of the long-range period with allowance made for the achieved level of development of the economy, factors of an economic, social and political nature and the degree of the international division of labor.

The achieved level of development of the economy determines the degree of satisfaction of social needs, which, although they form under the influence of the development of production, in their extent and composition exceed during each planning period the available production possibilities. Therefore a mandatory condition of the drafting of the plan is the determination of the amount of production resources, which society has during the given planning period. The limitedness of production resources for each planning period and the excess of social needs over the available production possibilities are the objective basis of the choice of the priority goals which are to be achieved during the given planning period. The establishment of the sequence in the achievement of the goals of the development of society in conformity with their national economic importance and the corresponding distribution of production resources determine the essence of the priorities.

A set of priorities, which includes the priorities which express the basic socioeconomic goals of the development of the country during the planning period (national economic); the need for the priority development of one

national economic complex or another (intersectorial); of one sector or another (sectorial); of the sectors or intersectorial complexes in one region or another (regional); some types of production or others (intrasectorial), as well as the priorities at the level of enterprises, which show the expedience of the priority development of one section or another, is used in the practice of planned management. The principle of priority is one of the basic principles in the planning of the national economy. But the form of its manifestation and implementation is constantly developed at the same time as the development of the economy and the improvement of the methods of planning.

During the period of industrialization, of which a still unformed, undeveloped economy was characteristic, the development of heavy industry--the basis of the development of the entire national economy--was the most important goal. This goal was achieved in the process of the implementation of plans, in which the principle of the leading unit, which acts as a historical form of the expression of the priorities of a specific period of the development of the economy, was the basic principle. Those sectors and works, which to a significant degree predetermined the development of the entire national economy: ferrous and nonferrous metallurgy, machine building, which are closely connected with the formation of the investment complex of the national economy, were grouped with the priority, or leading, units. Their priority presumed the priority allocation of the necessary production resources, the scale of which at that time was negligible. The remainder of the resources were distributed among the other sectors. The national economic plan was drafted as the combination of the program of the development of the sectors of the leading unit and the program of the possible development of all the other sectors on the basis of the priority distribution of resources in favor of the leading unit. The prewar and first postwar five-year plans were formulated on such a basis. This was historically justified, since the development of heavy industry was ensured by the concentration of resources on the development of the leading sectors.

During the postwar period, with the restoration and further development of the national economy, significant qualitative changes, which were due to the increase of the volumes, the rise of the technical level and the increase of the efficiency of production and the complication of economic relations, occurred in the economy. The national economy developed into a unified interconnected complex of sectors. In conformity with the qualitative and quantitative growth of the economy the production resources increased and the group of sectors, which along with the leading ones also received considerable resources for rapid development, was broadened, which ensured the more proportionate development of the entire national economy and the solution of social problems.

Under present conditions the demands on the improvement of the methods of the planned management of the national economy have increased. The task of the acceleration of the increase of labor productivity and the efficiency of social production on the basis of scientific and technical progress, the improvement of the economic mechanism and the increase of their influence on the change of the structure and growth rate of the national economy is being brought to the forefront. The form of the manifestation of priority has also changed. Individual sectors, which ensure the production and introduction of



new equipment and the acceleration of technical progress in the entire national economy, received preference under the conditions of development.

The economy of mature socialist society is characterized by qualitatively new traits, which appear first of all in the vastly increased scale and complexity of production, in the substantial increase of the level of the socialization of socialist production, in the complication of production relations and the increase of the interdependence of the development of individual sectors; in the achievement of such a level of the extraction of primary resources, when not their increase, but the introduction of new processing methods, which ensure the obtaining of a larger amount of the final product per unit of the raw materials being processed, is brought to the forefront.

Thus, at the present stage of development the changeover to a resource-saving type of reproduction and the change of intensification and increasing efficiency into the main factors of economic growth are objectively necessary. With allowance made for these peculiarities the plan of the economic and social development of the national economy for the 11th Five-Year Plan was drafted, and precisely during 1981-1985 our economy will take a new step in the direction of the all-round intensification of social production and the increase of its efficiency. This work will be continued on an even larger scale during the 12th Five-Year Plan. "The new five-year plan," K. U. Chernenko stressed, "first of all should become the beginning of profound qualitative changes in production, a five-year plan of a decisive change in the matter of the intensification of all the sectors of our national economy. The present material and technical base and system of management should find new, higher qualities."<sup>1</sup>

The strengthening of the overall orientation of the plans toward the accomplishment of the tasks of increasing the standard of living of the people and the complication of the goals of socioeconomic development are characteristic of the present stage of development.

All these factors are objectively increasing the need to approach the planning of the development of the national economy as a unified interconnected complex with allowance made for the system of production relations, various aspects of reproduction and the subordination of the development of the sectorial structure to the accomplishment of the national economic goals.

The requirement of the interconnected, balanced and dynamic development of the national economy predetermines the qualitative changes of the methodology of planning. As was noted at the December (1983) CPSU Central Committee Plenum, "many weak points remain in our planning mechanism. Some key tasks of the development of the economic frequently are as if added to the forming conditions of some regions and sectors or others. We must gradually rid ourselves of such, it can be said, a passive approach in planning."<sup>2</sup> This is increasing the need for the specification of the sectorial assignments and the corresponding distribution of resources on the basis of the basic socioeconomic tasks of the planning period. In this connection the role and importance of consolidated national economic calculations on the basis of the balance of the national economy and its further development, the intersectorial balance, which make it possible to define concretely the

socioeconomic tasks and the general economic proportions and to determine the amounts of production resources and their tentative sectorial breakdown, are increasing.

The practice of planning takes into consideration the objective limitations in the development of the national economy. First of all the achieved level of the production potential and the efficiency of the use of production resources to a significant degree predetermine the possibilities of the further development of the national economy. Such factors as the limitedness of the scale and the increasing difficulty of the commitment to the sphere of physical production of additional sources of primary raw materials, the decrease of the possibility of the additional commitment of manpower resources to physical production and the limitedness of the production resources being reproduced during the planning period, which to a significant degree is governed by the efficiency of the use of raw materials, fuel, materials, fixed capital and production capacities and by the lags of construction and the assimilation of the rated capacities, have an effect. The scale of the introduction of new advanced equipment and technology has an influence on the qualitative level of the production resources being reproduced during the planning period.

In the 1980's the production needs, which express the necessity of the allocation of resources for simple and expanded reproduction, as well as the socioeconomic tasks, which are governed by domestic and foreign economic and political factors, have increased exceptionally and become complicated. The importance of the assurance of the balanced, proportionate development of the national economy and of conformity between the set goals, which are expressed in specific national economic indicators, and the corresponding distribution of resources with allowance made for the interconnected development of the entire system of production relations and the sectorial structure of physical production, is increasing.

Under these conditions the further improvement of the methods of the planned management of the development of the economy and the bringing of them in line with the achieved level of development of the production, scientific and technical potential are a most important and urgent problem. The orientation when drafting plans toward the end national economic results and the increase of the use of the goal program method are one of the directions of its solution. The essence of this approach consists in the initial formulation of the specific goals of the development of social production and the determination of the production resources which are necessary for their accomplishment. The formulation of a goal program presumes its specification by individual stages, the determination of the set of measures for the fulfillment of each stage, the calculation of the amounts of resources, their distribution among interconnected associated sectors and the coordination of the production programs of the development of associated sectors. The period of the accomplishment of the goal programs, as a rule, goes beyond the five-year plans (the Baykal-Amur Railway Line, the development of the Nonchernozem Zone, the Food Program, the Energy Program). Their need for resources can exceed the possibilities of the national economy during the given planning period. In such a case a choice arises: to which of the programs to give preference or to what extent to implement the outlined programs within the

available resources. Thus, it is possible to a certain extent to regard the goal program approach as a certain modification, as applied to present conditions, of the principle of the leading unit.

The use of the goal program approach requires the improvement of the methodology of national economic planning in the following directions:

the broadening of the horizon of planning and the increase of the role and importance of long-term plans of the development of the national economy;

the drafting of five-year and annual plans with allowance made for the long-term plans and their consideration as specific stages of the accomplishment of the tasks of the long-term plans;

the increase of the importance of consolidated national economic calculations, which make it possible to determine the scale of resources of the future period and its individual stages;

the increase in the plans of development of the amount of reserves, which are regarded as a source of the assurance of a balance under the conditions of the making of an economic shift at one stage or another and other unforeseen circumstances.

Under the conditions of the intensification of social production the importance of ensuring the balanced, interconnected development of sectors on the basis of the aim of the plans at the most efficient use of all the available production resources is increasing. The inadequate consideration of this requirement leads to the disturbance of the balance of physical production, the decline of the growth rate and other undesirable consequences.

As the experience of the 1970's and early 1980's attests, the disturbance of the balance in the development of the sectors of the national economy, particularly between the raw material and processing sectors, between the need for capital investments and the possibilities of the investment sectors and the sectors, which produce construction materials, led to the decrease as compared with the plan of the indicators of the efficiency of the use of production resources and the rate of economic growth. It prevents the intensification of production, aims at the increase of the quantitative indicators to the detriment of the qualitative indicators and leads to the decrease of efficiency, since inefficient methods (the lengthening of the construction period, the decrease of the quality of raw materials and materials) are frequently used to lessen the strain.

The strain in the backing of social needs with production resources increases the urgency of the problem of priorities at all levels of planning activity. The assurance of the balance of development and the elimination of strains, the achievement of conformity between the objective needs and the available resources require a comprehensive approach to the planning of the development of the national economy and sectors on the basis of the end national economic results.



Thus, the center of gravity at the state level in the determination of the priorities is shifting from individual sectors to large intersectorial complexes. The formulation of priorities begins with the determination not of the preferableness of the development of individual sectors, but of the priority of the meeting of the ultimate national economic needs on the basis of the greatest possible efficiency of the use of production resources and the intensification of production in individual sectors of the national economy, which is achievable by the introduction of the achievements of scientific and technical progress during the planning period. This, of course, does not eliminate the problem of priorities within individual sectors or regions.

The ultimate national economic needs express the tasks of the further steady increase of the standard of living of the people, the development of science and culture, the further increase of the economic might and the strengthening of the defensive capability of the country, the development of foreign economic relations and so on. For the purpose of the comparative evaluation of the achievement of various end national economic results and the amounts of production resources, which are needed for their accomplishment during the given planning period, the multivariant nature of the planning studies in case of the substantiation of the prospects of the development of the national economy should be increased.

The end results of physical production are reflected in generalized form in the dynamics of the resources of the national income and the final product, while the specification of the various forms of the ultimate social needs finds its reflection in planning practice in the determination of the component structure of the national income and the final product. For example, the tasks of increasing the standard of living of the people are being accomplished by means of consumption funds, which support current personal and public consumption, and nonproduction capital investments, which are channeled into housing construction and the development of services. The further development of the production potential is being accomplished by means of productive capital inventions. The national economic goals in the area of the international division of labor, and particularly the solution of the problems of the comprehensive program of socialist integration, are embodied in the planning indicators of the export and import of products.

The determination of the scale and direction of the development of physical production in conformity with the ultimate needs of society presumes the specification of the ultimate needs of society up to the level of sectorial and intrasectorial physical indicators. This implies the need for the determination of the sectorial and the product compositions of the components of the national income and the final product, which are being allocated for the meeting of the ultimate needs of society.

The comprehensive approach to the planning of the development of the national economy presumes the elaboration and use on the basis of the ultimate needs of society in specific sectors of physical production of a set of indicators of the specific consumptions of production resources per unit of output. This set should reflect the influence of scientific and technical progress on the level of the use of various production resources, which is achievable during the given planning period; should serve as a means of ensuring the

interconnection of the specified ultimate needs of society with the plan assignments for the sectors of physical production, the determination of the amount of production resources, which is possible within the given planning period, and their sectorial breakdown.

The diversity of ultimate needs and the limitedness of resources constitute the basis of the variance of the planning studies of the prospects of the development of the economy. The direction of national economic development is determined first of all by the policy of the distribution of resources of the national income and the final product for the purposes of the increase of the well-being and the expansion of the production potential, which is manifested in the planned dynamics of the rate of production accumulation. This dynamics to a significant extent influences the correspondence of the level of accomplishment of the strategic tasks during the given planning period and the long-term future. The variant distribution of resources for the increase of the standard of living is of substantial importance from the point of view of the direction of the development of the economy. Along with the problem of the more complete meeting of the needs of the population for items of current consumption, that is, by means of the resources of the consumption fund, the problem of improving the social living conditions of workers is becoming more and more urgent.

The formation of the sectorial and the product structures of the consumption fund is also a basis for variant calculations. In many ways it is due, if we take the long-term future, to the planned allocation of resources for the purposes of personal and public consumption, to the possible increase of the income of the population and to the degree of the meeting of the needs for the products of individual sectors. A significant place is also assigned to different versions of the development of foreign trade, which are manifested in the total amounts of the export and import of products, first of all in the change of the sectorial and product composition of each of these components.

In the process of the formation of national economic plans the problem of priorities implies the determination of not only the ultimate goals, but also the means of their achievement. The solution of this problem requires the determination of the most preferable distribution among sectors of the basic types of production resources--material and manpower resources, fixed capital and capital investments--for the meeting of national economic needs. Thus, the concept of priority as applied to the means of achieving the goals also signifies the determination of the most effective direction of the use of each type of production resources.

The method of the intersectorial balance makes it possible to determine the scale and the directions of development of the economy, proceeding from the ultimate needs of society and on the basis of the standards of the use of production resources. At present a set of intersectorial models, which has been adopted by the USSR State Planning Committee within the central complex of tasks of the automated control system for planning calculations in the block "The Consolidated National Economy Plan," has been elaborated and tested experimentally. The set includes a consolidated dynamic model in value terms and a detailed physical-value intersectorial balance. The consolidated model is designed for the preliminary study of the versions of the socioeconomic

concept of the future period, the evaluation of different versions on the basis of the scale of the production potential, which has been accumulated by the start of the planning period, the anticipated change of the efficiency of the use of production resources in the sectors, as well as the directions of change in the structure of the ultimate needs of society.

Problems of the choice of the priority direction of the development of the sector in conformity with the specific need of the national economy for the products of the given sector and the allocated amounts of resources, the assurance of the optimum distribution of the capital investments, which are being allocated to the sector, between new construction, the expansion and renovation of operating enterprises, the updating and modernization of operating equipment arise at the sectorial level. These directions should take into account the efficiency not only from the standpoint of capital investments, but also with allowance made for the changes in the types of raw materials being consumed under the influence of the change of equipment and production technology, the saving of manpower resources, as well as the territorial distribution of the enterprises under construction on the basis of the need of the region for the products of the given sectors and the availability in the region of production resources.

The qualitatively new stage in the formulation of scientific methods of determining the priorities of various levels of national economic planning involves the elaboration of a set of optimization models, in which the priority of one ultimate national economic need or another can be expressed as the optimality criterion of the model. The goal of the calculations on the basis of these models is the search for the most effective means of achieving the maximum possible end results of national economic development given the existing resource limitations. The limitations with respect to the volumes of production of individual types of products, exports and imports, the creation of reserves and so on can be them. The use of the optimization system makes it possible to evaluate the national economic impact of the interchangeability of production resources: labor and fixed production capital, individual types of material resources, for example, the degree of replacement of ferrous metals with nonferrous metals and chemical materials in machine building, construction; natural fibers with chemical fibers in light industry; individual types of fuel resources in electric power engineering and so on.

Models of the optimization of the distribution of the production of output of sectors (intersectorial complex) by economic regions can be used for the determination of the priority in the means of the achievement of the goals set for the sector. The minimization of the adjusted national economic expenditures in case of set amounts of output and the maximization of the production of output in case of limitations with respect to manpower resources and capital investments serve as the optimality criterion in these models.

The optimization models make it possible to obtain on their basis a set of special evaluations. The latter determine the importance of each type of production resources from the standpoint of the accomplishment of the set goals, which were formulated in the optimality criterion, and the comparative shortage of various types of resources. As a result of this they can be

regarded as a form of the expression of priority when formulating the plans of the development of production.

At present research is being conducted on the experimental checking of the functioning of the set of models at the institutes of the USSR Academy of Sciences, the Scientific Research Institute of Economics and the Main Computer Center of the USSR State Planning Committee and others.

The improvement of the scientific methods of determining the priorities in the development of the national economy and the consideration of these priorities in the process of drafting plans create the conditions for the successful accomplishment of the strategic task which was posed by the party for the long-range future--the increase of the standard of living of the people on the basis of the steady balanced development of the national economy under the conditions of the acceleration of the intensification and the increase of the efficiency of social production.

#### FOOTNOTES

1. K. U. Chernenko, "Narod i partiya yediny. Izbrannyye rechi i stat'i" [The People and the Party Are United. Selected Speeches and Articles], Moscow, Politizdat, 1984, pp 418-419.
2. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 26-27 dekatrya 1983 goda" [Materials of the CPSU Central Committee Plenum, 26-27 December 1983], Moscow, Politizdat, 1983, p 21.

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## REGIONAL DEVELOPMENT

## PROBLEMS OF NORTH, FAR EAST REGIONAL DEVELOPMENT AIRED

## Improving Northern Benefits Discussed

Moscow SOVETSKAYA ROSSIYA in Russian 13 Dec 84 p 2

[Article by A. Shchegolev and V. Yaroslavtsev, special correspondents: "Man and the North"]

[Text] On a trip to the North Yenisey area one hears many people talking about the shrinking differential between the level of growth in wages in the Polar Region and on the "continent." We met a number of people who recalled with a sigh the times 15 or 20 years ago when average wages throughout the country were much lower than today. Then the northern area supplement attracted and retained cadres; however, today they claim that it has lost its position. Some sort of additional measures are necessary. Perhaps new benefits?

"I don't think so. The view that the greater the monetary advantage the better is not bearing out today," asserts B. Ya. Rozin, candidate of economic sciences, chief of the Legal Department of the Noril'sk Combine. We have noticed that a person who has worked at least three years stays at an enterprise, while most of the "rolling stones" are people who have lived in the North a year or less.

Statistics support this opinion. Many managers from the "continent" envy the low, roughly 10 percent, cadre turnover at industrial enterprises in Noril'sk. The average term of employment at the combine is eight years. As we see the majority of Noril'sk residents are not satisfied to leave after the agreed term alone. Every third worker has 10 years under his belt and every ninth has given more than 20 years to the combine. The day is not far off when one in ten workers will have been born here.

Does this mean that there is no basis for the disquietude? Do not forget that oases in the Tundra like Noril'sk (including the cities of Talnakh and Kayyerkan) are still few in northern Russia, and there are no equivalents on the Yenisey meridian. A widely developed social infrastructure is a good core for northern benefits. In places where it has not been developed, supplements do not work and benefits end up harming the state.

We will find examples not in the cities and settlements which chronically suffer from shortages of social services, but in Noril'sk itself. We spoke in the cadres section of one of the factories about the attitude toward newcomers. They are glad to see them and find them worthy employees; as a rule the replacements arrive after serving in the ranks of the Soviet Army. People who leave are told to come back by when it gets difficult. "Difficult" for some begins almost the very next day.

Here is official information. At the mining and metallurgy combine which has a relatively favorable record for cadre turnover, in the past four years, relocation compensation given to persons who worked less than three years totalled eight million rubles, an average of two million rubles per year. We underscore: compensation for "relocation...to those who worked." Consider a person who leaves work without good reasons or is released before his term of work has been completed. Is this possible? It turns out that it is possible, although Point 2A of the 15 July 1981 USSR Council of Ministers Decree provides that under these circumstances the worker is required to return all of the funds which the state paid to him in connection with his move to another locality.

"But the loophole is that this statute does not extend to workers in the Far North," Boris Yakovlevich Rozin explains to us. "For us Point 16 of the USSR Goskomtrud [State Committee for Labor and Social Problems] and AUCCTU instruction of 16 December 1967 is still in effect. It instructs the released worker to return that amount of the one-time allowance which is proportionate to the time remaining until the completion of the term of the labor agreement; i.e., not completely, but partially. More than that, other sums (cost of travel, baggage, daily rations and wages during the trip) need not be returned at all. This "benefit" is being willingly used by ill-intentioned violators of labor discipline, shirkers, drunks and in the best of cases by those released at their own request without good reasons.

What could be simpler it would seem: replace the ill-starred "Point 16" in the interests of strengthening labor discipline and reducing cadre turnover. This would be all the more appropriate since conscientious workers in no way suffer from it. But here the enigma begins. During the years since the instruction was issued, the Fundamentals of Legislation of the USSR and Union Republics on Labor and other normative documents aimed at strengthening labor discipline and reducing cadre turnover were passed in the country. But the obsolete instruction remains in effect and functions contrary to them. When the chief of the combine's legal section, not agreeing with this situation, appealed to the central organs, he received a vague answer from the USSR Goskomtrud legal department, the essence of which contradicted even the former explanations by the same legal department. At the same time assurances followed that the remarks would be considered in draft instructions which were being prepared.

More than a year had already passed since the correspondence began. The promised instruction had not yet come to light and the Noril'sk Combine had not seen the completed draft. They did not consider it necessary to send it.

"This attitude is dictated by something, but not the interests of the work," says B. Ya. Rozin hotly. He is truly amazed at how an authoritative document can be prepared without considering the opinions of specialists working in the Far North. "Who is confronted more than we are with the 'mechanism' of benefits and with their effectiveness? And this is not a matter of raising them, but of putting them in order. In its present form, compensation for northerners very often resembles an invitation for a free 'excursion' to the Polar Area at the expense of the government. On our trip we also saw that the northern 'rolling stone' type, who exploits the loophole of the state instruction truly exists. They no longer go only 'after dreams' and 'after money.' An opportunistic self-seeker, having obtained duplicate work booklets, also chases 'after traveling expenses,' a boon of the truly unbounded Russian North."

Research of the interdepartmental territorial commission of USSR Gosplan shows that two thirds of the volunteers coming to Tyumen Oblast leave the North after living there a year in all. Of course not all are "rolling stones." A portion are disenchanted "romantics," cooled off by the truly severe everyday life. Some portion were not able to adapt. The health of the northerners is one of the most important problems of strengthening the cadre situation in the Polar Region.

The toilers in the Noril'sk industrial area are carrying out their second five-year plan in a row under the banner of the goal oriented program, "Five-Year Plan for Health." In the words of M. I. Tenetko, chief of the city health section, a subsection of the next "five-year plan" is being prepared in the plan for social development of the enterprises.

"The North, just as in the first years of its settlement, constantly tests a person's strength and survivability and demands psychological staunchness and, of course, health," says Mikhail Ivanovich. The complex problem of adapting to the North is urgent even today. And it seems to me symbolic that the first woman in our region, Yelizaveta Ivanovna, wife of Nikolay Nikolayevich Urvantsev, the discoverer of the Noril'sk deposit, was a doctor. The people in white gowns helped to refute the prevalent conclusion of scientists that "here only men up to 35 years of age can live." The current population of the country's "biggest polar station" numbers 270,000 men, women and children of all ages. And we are proud that their health is no different than that of their contemporaries in temperate and southern latitudes.

We listen to our host and think what a great social effect has been achieved here. It is not enough that the climate in the Polar Region has become no warmer or milder. To the special features of the region were added the traditionally uncomfortable conditions of work in metallurgy and mining. How effective the measures combatting these difficulties must be since in recent years pneumonia in the region declined 36 percent and ischemia of the heart [lack of blood supply] declined by 19 percent. In the opinion of the scientists these are typical illnesses of northerners.

The institutes of the USSR Academy of Medical Sciences, scientific collectives in Moscow, Sverdlovsk, Novosibirsk, Tomsk and Krasnoyarsk, and party, soviet,

trade union and economic leaders in the kray constantly take part in working out program recommendations.

Researchers are convinced that it is not so much the climate that impacts on the health of northerners, as it is the way of life and behavior of persons here. For example, a "popular" illness currently, hypodynamia [extreme weakness and reduction of muscular activity], especially threatens the northerner who is forced during the polar night to spend most of his time in closed buildings. This same feature also affects vision by causing premature nearsightedness. Introduction of the scientists' recommendations has made it possible to prevent many illnesses.

Nevertheless there are phenomena at the higher latitudes which are unknown to residents of the "continent." For example, one day the "first aid" vehicle responded to a call from a sick person and the driver became confused. There was no such address in the city. Later it turned out the the call had come from Khabarovsk. How had the low power radio signal travelled thousands of kilometers? The incident interested not only space physicists but also doctors. They noticed that unseen magnetic and solar storms influence both the transmission of radio waves and how people feel. People in poor health feel worse during these periods. How can they be helped?

Scientists in the scientific research laboratory for polar medicine, jointly with meteorologists and space physicists, worked out a method of long-range forecasting of magnetically active days. Now their prognoses are regularly sent to hospitals and polyclinics in the Industrial Region. Advance knowledge of "peaks" helps the sick to prepare for them. This substantially reduced the number of aggravations of various illnesses.

Noril'sk is proud that each year one or two preventive medicine establishments enter operation. Just the same Noril'sk is still far below the national average for providing health establishments for the population. Whereas in non-polar areas there are two hospital beds for a certain number of residents, in Noril'sk there is but one. And this, of course, has its effect on the stability of the population. As the sociologists say, in the North it is necessary not only to achieve the average statistical indices, but to surpass them. The Polar Region resident's need for practically all material goods and services is greater than those of residents of lower latitudes. As an example we will cite data of scientists from the section for social problems of work and people's well-being of the RSFSR Gosplan Central Scientific Research Economics Institute. The organism's need for food (calorie intake) is an average of 20 percent higher in cold climate. The general per capita normative expenditure of money for clothing approximately doubles. The need for living space is 20 percent higher and the need for hospital beds is 30 percent higher.

There is still one more "illness" inherent only to the North: information famine. It has long been noted that here there is an increased love of reading, television, new plays and sports competitions. We will touch on only one, the most massive aspect of this need -- television information. It is excellent that today, even at polar stations, the central television program can be received by satellite. This is an undoubted step forward. But how can



the total closing of local television studios be explained? Their unprofitability? Are we not losing from such frugality something socially more important?

Last year the television studio in Igarka closed. The specialists were given work and reporting on the life of the rayon and city was entrusted to a pool of correspondents. The savings were undoubted. But here is the rub: the kray television program does not reach the northerners. The local correspondents are working in the blind for their own region. Area residents turn on the blue screens and sigh. Now they know a great deal about events throughout the country and abroad and next to nothing about what is going on nearby.

And the opportunities for "local" television studios are unlimited. We heard with great interest about the annual accounting of the gorispolkom to the residents, which has become traditional for Noril'sk. No television whodunits on other channels can compare with this and other broadcasts, in which all can participate without leaving home. An answer is given to any question on the program's topic, and they are most varied: health, trade, youth problems and the overall activity of the soviets. Frequently the time for the broadcast runs out long before the end of the conversation, but the viewer knows that he is invited at the designated day and hour to continue the discussion.

Our Noril'sk colleagues listened to our enthusiastic comments about their work and smiled sadly. "Do you know that they might close the television studio in Vorkuta? Doesn't this threaten us too? In any case, we are already aware of a plan to reduce 'local broadcasting.'"

Man and the North. The topic is inexhaustible and demands the journalist's closest attention.

#### Komi Development Problems Discussed

Moscow SOVETSKAYA ROSSIYA in Russian 11 Jan 85 p 2

[Article by Professor M. Roshchevskiy, chairman of the Presidium, Komi Branch, USSR Academy of Sciences: "Northern Variant"]

[Text] The Komi land is vast -- it extends more than nine parallels from south to north. The northern kray is rich in natural resources. Coking and power generating coal, petroleum and petroleum products, natural gas and technical carbon black, wood particle board and fiber board, plywood and cellulose, paper, cartons and many other products are delivered to all the union republics, 10 krays and oblasts in the RSFSR and foreign countries.

Determining the strategy for developing the region is the main task of all the institutes and sub-elements of the Komi Branch, USSR Academy of Sciences [AN]. Research on the comprehensive program for scientific and technological progress in the European North of the country for the long-range future is being conducted jointly with the Kola and Karelian branches of the USSR AN.

Scientists at the Geology Institute compiled a new map of petroleum, gas and geological regions, forecast the quality of petroleum and gas in the Timano-Pechora oil and gas province, estimated the reserves of coking, power generating and technical coal in the Pechora Basin along with the Polyarnouralgeologiya association, and developed recommendations for their comprehensive development.

The Komi Branch is working persistently to carry out the USSR Food Program. Jointly with the State Agricultural Experimental Station a system for introducing agriculture to the Komi ASSR by 1990 has been worked out, research is being carried out to optimize the water system and increase the fertility of podzolic soils and a great deal is being done to introduce scientific achievement into agricultural production. A group of workers in the Geology Institute this year was awarded the USSR Council of Ministers prize for introducing new, highly effective fodders into cultivation.

Branch chemists developed a technology for processing lignin (forest industry waste) into fertilizer for agriculture, which will help to raise field productivity and have a great positive economic effect.

To summarize, it can be said that the overall scientific thrust being developed in the Komi Branch of the USSR Academy of Sciences mirrors the tasks of the region. Naturally, scientists are interested in seeing the results of their research introduced into practice comprehensively, with consideration given to all the interrelationships between nature and society and between social-economic and production and technological processes.

Now that work on the Comprehensive Program for Scientific and Technological Progress and the General Diagram for the Development and Distribution of the Country's Productive Forces have been completed, the time has come for intensive development of regional comprehensive programs. It must be kept in mind that the time factor is particularly important under our country's five-year and long-range planning. If the program (planning document) for the Timano-Pechora TPK [Territorial Production Complex] is not compiled in the very near future, it will be deprived of a most important element of planning. As the saying goes -- a spoon is most valuable at dinnertime [it's all in the timing]. The Komi Branch of the USSR Academy of Sciences and republic party and soviet organs have repeatedly requested that USSR Gosstab [State Committee of USSR Council of Ministers for Material and Technical Supply] complete development of the goal-oriented comprehensive program for formation of the TPK in a timely fashion. However, so far there is no such program.

We understand the difficulty of this work and can even recognize the advisability of a certain compromise between science and territorial planning. For example, developing of a goal-oriented program for a fuel and energy complex (TEK) in the European Northeast in the first stage is permissible. However, we cannot agree that the program for a separate inter-branch complex (in this case a TEK) can pass for the general program of the Timano-Pechora TPK. The policy of "narrowing" the structure of the TPK in official planning documents of USSR Gosplan, RSFSR Gosplan and their institutes is being followed precisely. Therefore, it should be emphasized that in addition to

the fuel and energy program, sub-programs for the forestry and chemical-metallurgical departments are extremely necessary.

The absence of a goal-oriented comprehensive program is already having its effect. Despite the fact that a USSR Council of Ministers resolution on measures to develop the Pechora coal basin was adopted in March 1982, the extraction of coal not only is not increasing, but a tendency toward decline has even been noted. Now a total of 28-29 million tons of coal are being extracted annually in the basin and only 20 million tons in the Vorkutaugol' Association, supplier of the highest grade coal. In order to maintain even this level of extraction until the year 2000, it is necessary to begin to build mines in Vorkuta with an overall yield of more than 10 million tons annually. Otherwise yield will fall, since the old mines are gradually giving out.

Coal reserves here are tremendous -- many tens of billions of tons. The basin can and must become the base for developing energy and chemical industry for the European part of the country. Two-thirds of the coal being extracted here is coking coal. It is being used at the Cherepovets and Novolipets metallurgical factories. The quality of Pechora coals is substantially higher than that of others. They are unchallenged in terms of the value of the final product obtained in the factories.

The uninformed individual may think that coal mining in the Polar Region is expensive and disadvantageous for the state. But this is not so. Mining in the Pechora Basin is more efficient than in many other regions and than the country's overall coal mining average. It is enough to say the labor productivity of the miners here is 1.8 times higher than the branch average. A most important index of economic efficiency is the production cost of mining a ton of coal. This year it is 20 percent under the branch average in the Pechora Basin. Mining is still more efficient in the Vorgashor Mine, largest mine in the European part of the country, a fact which argues for construction of large mines in the Pechora Basin.

The high efficiency of coal mining is largely a result of more favorable geological conditions than in other basins, which makes it possible to use mining equipment more productively and save on aggregate expenditures of social labor. It should be added that Pechora coals are at present fully competitive with Kuznetsk coals for consumers in the European part of the USSR, and transport costs are lower.

Discussions have been going on for many years now on developing the rich Yarega titanium ore deposits, which three ministries (oil, chemical and non-ferrous metallurgy) cannot find a way to "divvy up." And while they argue the country is not getting a most valuable raw material.

Another example. The republic's gas and oil deposits have a high content of heavy hydrocarbons, paraffin and other components which are indispensable for production of plastic and protein and vitamin concentrates. This makes it possible to improve the output of polyvinyl chloride, which is sorely needed by the cable, construction materials and light industries. And the deficit in full-value feed protein for animal husbandry could be made up by

microbiological production of protein and vitamin concentrates from hydrocarbon raw materials with the use of biotechnology. Unfortunately, here as well, events are not developing as fast as would be desired.

I believe that our region is the only one in the European part of the country where the volume of forest product deliveries is still growing. Unfortunately, the problem of the use of forest resources is very acute. Wood is being made in the republic by 240 enterprises subordinate to 25 ministries and departments. Most of these enterprises are small and they take only the timber, leaving to rot around the stump over 70 percent of the forest product raw materials. The losses by these small enterprises per ruble of product is two to three times as great as the branch average.

I think enough examples have been given. Many are indicative of unsystematic, narrow bureaucratic management, which in turn predetermines the absence of a goal oriented comprehensive program for the long-range development of the region.

This also has its effect on the development of the social infrastructure, especially in the oil and gas belt and most particularly in the oil producing center of Usinsk. The availability of all types of social infrastructure here is substantially lower than the republic average. At present, for every 100 people employed here in material production only 22 are engaged in the services sphere. This is half the Komi ASSR average.

This situation is explained most of all by the extremely low initial level of development of the services sphere and by the clear disproportion in the development of the production and non-production spheres, resulting from a parochial approach to social problems.

Solving social problems under conditions of the Far North is made more difficult by the increased needs of the population. This is not only due to natural factors, but also as a result of demographic peculiarities. The rapid rise in population and large percentage of school-age and pre-school age children demand intensified development of residential and communal facilities, children's pre-school establishments, schools, restaurants, health services, personal amenities and passenger transport.

The problems which scientists in the North must solve are very specialized. Their specific nature results from the natural and climactic conditions of the region and its geological and physical-geographical situation. The Presidium of the USSR Academy of Sciences rightly tasked the Komi Branch to develop such scientific lines of inquiry which permit answering not only the question of what and where to take from the natural resources, but also, most importantly, how to obtain a prepared industrial product and not only raw material for further processing. This is not an easy task. It requires the creation of new lines of scientific inquiry and a strong experimental and production base.

The CPSU Central Committee and USSR Council of Ministers decree "On Measures to Accelerate Scientific and Technical Progress in the Economy" stated that the scientific centers still do not exert enough influence over the ministries and departments in their conduct of a scientific and technological policy



which is responsive to the key tasks of the country's economic and social development. The collective in our branch accepts this criticism fully and completely.

The tasks facing the Komi Branch scientists have been defined: Our work must be aimed at accomplishing basic and applied research on urgent problems of developing the productive forces and intensifying production in the Timano-Pechora TPK which is being established. We are obligated to have a more active influence on improving labor productivity and accelerating the economic and social development of the country's northern region.

#### Educational Problems in Far East

Moscow PRAVDA in Russian 5 Dec 84 p 3

[Article by V. Khatuntsev: PRAVDA correspondent: "Examination for Maturity"]

[Text] For some higher school graduates assignment to enterprises in the Far East is wrapped up in a romantic haze. However, it causes some concerns for the region's industrial managers. The young specialists must be settled, which is accompanied by considerable expenses. Moreover, by no means all of those arriving find it easy to adapt, and this means that their turnover is high.

However, training cadres locally is a more effective and far-sighted method. Much has already been done toward this end. In Khabarovsk alone there are 11 higher educational institutions, 5 institutes of the Far Eastern scientific center of the USSR Academy of Sciences [AN], and several economic sector institutes and branches.

Development of the kray's economy actively influences the strengthening and specialization of a higher school. This can be seen from the example of the Khabarovsk Polytechnical Institute. The size of the forestry complex grew and the institute opened a forestry engineering faculty. The number of computers increased and personnel to service them began to be trained.

In this regard, it is time to look closely at the scientific capability of the local higher school and see whether it is prepared to graduate specialists trained at the modern level. Understandably this depends most of all on the qualifications of the instructors. We could paraphrase a well-known aphorism: tell me who your teacher is and I will tell you who you are.

Alas, many Khabarovsk students cannot name any professors or doctors of sciences among their teachers. The most solid group of cadres is found at the medical institute, where there are 32 doctors of sciences. But in the Institute for Rail Transport Engineers only three out of 540 teachers hold this rank. In some VUZes -- pharmaceutical, economics, institute of culture -- there are no doctors at all.

In a number of instances their "neighbors, the academic institutions, come to their aid. Thus, an agreement on creative cooperation has been concluded

between the Far Eastern Scientific Center Institute for Economic Research of the USSR academy of Sciences and the economics educational institute. Scholar-economists conduct lessons with students and graduate students.

"Very recently two teachers from the economics institute defended their candidate dissertations in our specialized soviet," V. Chichkanov, director of the Institute for Economic Research and USSR Academy of Sciences corresponding member, says. "In general it would be desirable for candidates for graduate work with us to be selected more strictly. It is unforgivable when a teacher-economist fails his entrance exams. And there have been such cases."

In each VUZ there is a plan for training candidates and doctors of sciences. However, these plans are not always being accomplished, and not everywhere is care being taken to improve such an important matter for the VUZ. Here the experience of the pedagogical institute is extremely important. Just a few years ago they had no doctors of sciences and now there are five. The rectors and the institute party committee painstakingly monitor how the competitors are conducting various creative stages, and what help should be given to the future candidates and doctors of sciences.

But here is what is annoying -- frequently scientists brought up within the walls of local VUZes still back their bags. During the last 4 years, 135 of 300 persons who defended their dissertations moved out of the kray. At the academic institutes immunity to migration of the scientists is stronger.

"The fact is that the VUZes in the kray are in more difficult circumstances," explains Yu. Kosygin, hero of socialist labor, director of the Institute for Tectonics and Geophysics of the Far Eastern Scientific Center of the USSR Academy of Sciences. "Therefore, their 'losses' are also greater. Try to hold on to a young candidate of sciences if he is offered an apartment, a laboratory and often even a better scientific school closer to the center of the country. There is but one conclusion: more attention must be given to working and living conditions for higher school employees.

As a matter of fact, to this day some respected candidates of sciences are forced to knock about in dormitories. For example, we in the pedagogical institute said goodbye sadly to a specialist rare in her field, G. Makarova, a candidate of pedagogical sciences and chief of the faculty of the theoretical foundations of physical education. In Mogilev where she went she was immediately offered an apartment, while here she had lived in a dormitory.

But people leave not only because of the housing shortage. In order for a scientist to grow he must have conditions for research. The weak material base of the Khabarovsk higher school, "lecture hall famine" and absence of specialized repair services result in many economic problems. For four years the pharmaceutical institute has been waiting for the "Grazhdanproyekt" building to be turned over to the VUZ. However, RSU-3 [Repair and Construction Administration-3] of the Gorremstroy Trust has been engaged in repair of the building for an unjustifiably long time. Meanwhile, the facilities space in the institute is one-tenth the norm.

"We pay 25,000 rubles annually to rent space," recounts V. Surtayev, rector of the Institute of Culture. The question of building a dining hall has been going on for three five-year plans. The RSFSR Minister of Culture is no longer allocating funds for it, because it has learned through bitter experience that its allocations are not utilized. We applied to the local organs for help in being put in the itemized list of construction projects. Promises are made but no solution to the matter can be seen.

The ministries, departments, enterprises and organizations who obtain their cadres from graduates of Khabarovsk institutes also could contribute more actively to development of the material base of the VUZes. The Khabarovsk Polytechnical Institute sends specialists to various branches, but many of them do not respond to its needs. Thus, when the forestry engineering faculty was organized there was an agreement made with the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry to build a training laboratory facility, but there is no trace of it.

In recent years, power in the region has been developing intensively. The question of training power engineering cadres has long reached a state of "high tension." The polytechnical institute could set about their training if an appropriate base were developed. But USSR Minenergo [Ministry of Power and Electrification] has not yet responded to the proposal by the Far Easterners.

M. Danilovskiy, rector of the polytechnical institute, heads the council of VUZ rectors, the higher school coordinating organ for the kray. Important questions of scientific research work are discussed in its sessions and experience is shared. It is not at all accidental that the council also includes party, soviet and economic workers. This gives them the opportunity to be involved in the institutes' concerns.

Modern production does not make allowances to the young specialist for ignorance, lack of information or technical provincialism. Qualifications obtained in the institute rather quickly have an economic return -- or, on the other hand, economic losses. The latter is a minus not only to the individual capabilities of particular graduates, but also to the organization of the training process. There is nothing trivial about training specialists; any defects in training make themselves known. It follows that the institute must first pass the examination for professional maturity -- no matter in what far off region it may be located.

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